

Abstract of the Disclosure

[0043] A method and system is provided to synchronize a communication signal. Phase and timing offsets are first estimated in order to calculate a frequency offset. Specifically, a system and method for synchronizing a communication signal is provided, comprising a satellite adapted to transmit a signal. The signal includes data information and synchronization information. A receiver adapted to process the signal received from the satellite and determine offset information from the received signal is also provided. The receiver includes a phase estimator adapted to estimate a phase offset of the received signal, a timing estimator adapted to estimate a timing offset of the received signal, and/or a frequency estimator adapted to derive a frequency offset from the phase and timing offset comprising removing the modulation from the received signal. The received signal is sampled for information carrying data. A determination is made as to whether the step of sampling was done at a peak wave point of the data, and the step of sampling is repeated in a response to a determination that the sampling was not done at a peak wave point of the data.